

broken in the middle. Wing-scales dark, the costa, first and third veins often appearing darker.

Types, three males, No. 24953, U. S. Nat. Mus.; Anchorage, Alaska (2), June 11, 1921 (J. M. Aldrich); Camp 327, Alaska Engineering Commission, Alaska (1), July 12, 1921 (J. M. Aldrich).

Also females as follows: Anchorage, Alaska, July 21, 1921 (J. M. Aldrich); Hurricane, Alaska, July 15, 1921 (J. M. Aldrich); Popoff Island, Alaska, July 8, 9, 11, 13, 16, 1899 (T. Kincaid).

## THE AMERICAN AEDES OF THE IMPIGER (DECTICUS) GROUP

(*Diptera, Culicidæ*)

By HARRISON G. DYAR

The species are here considered solely as they occur in North America. It is probable that one or more of them are the same as species occurring in north Europe, and if this is established, it will effect a change in nomenclature, namely, the sinking of *lazarensis* under *communis* DeGeer; but as the American forms will doubtless remain as races, the change will not be radical. The male hypopygium is not clearly diagnostic of species in all cases, and does not define the races at all; much the same condition existing as with the *punctator* group, discussed heretofore (Ins. Ins. Mens., ix, 69-80, 1921). The larvæ are more characteristic, defining the species well. Two series exist, the *lazarensis* series in which the male hypopygium has the apical lobe of the side piece well haired, and the *impiger* series, in which it is nearly bare.

### SERIES 1

#### SPECIES 1

*Aedes* (*Ochlerotatus*) *prolixus* Dyar.

*Aedes prolixus* Dyar, Ins. Ins. Mens., x, 2, 1922.

Marked like normal eastern *lazarensis*, except that the bands tend to fuse centrally. The genitalia are distinctive. The

species comes from Alaska, as reported on a previous page, but is a somewhat rare form.

## SPECIES 2

**Aedes (Ochlerotatus) pionips** Dyar.

*Aedes pionips* Dyar, Ins. Ins. Mens., vii, 19, 1919.

*Aedes pionips* Dyar, Ins. Ins. Mens., viii, 7, 1920.

*Aedes (Heteronycha) pionips* Dyar, Ins. Ins. Mens., viii, 105, 1920.

*Aedes (Heteronycha) pionips* Dyar, Trans. Royal Can. Inst., xiii, part 1, 99, 1921.

Besides the Canadian records given in the last citation, the species occurs at Skagway, Alaska, and in the Glacier National Park, Montana. So far it has not been taken in the mountains of New Hampshire or northern New York. It appears to be unrepresented in the Cascades and the Sierra Nevada along the west coast.

## SPECIES 3

**Aedes (Ochlerotatus) lazarensis** Felt & Young.

*Culex lazarensis* Felt & Young, Science, n. s., xx, 312, 1904.

*Culex lazarensis* Felt, Bull. 79, N. Y. Sta. Mus., 309, 1904.

*Culicada lazarensis* Felt, Bull. 79, N. Y. Sta. Mus., 391b, 1904.

*Culicada lazarensis* Felt, Bull. 97, N. Y. Sta. Mus., 448, 478, 1905.

*Grabhamia lazarensis* Dyar, Proc. Ent. Soc. Wash., vii, 48, 1905.

*Aedes lazarensis* Dyar & Knab, Journ. N. Y. Ent. Soc., xiv, 202, 1906.

*Ochlerotatus lazarensis* Coquillett, U. S. Dept. Agr., Bur. Ent., Tech. ser. 11, 19, 1906.

*Ochlerotatus lazarensis* Dyar, U. S. Dept. Agr., Bur. Ent., Circ. 72, 6, 1906.

*Culicada lazarensis* Theobald, Mon. Culic., iv, 360, 1907.

*Culicada lazarensis* Theobald, Mon. Culic., v, 295, 306, 1910.

*Aedes lazarensis* Howard, Dyar & Knab, Mosq. No. & Cent. Am. & W. I., iv, 733, 1917.

*Aedes (Ochlerotatus) lazarensis* Dyar, Ins. Ins. Mens., vi, 78, 1918.

*Aedes lazarensis* Dyar, Ins. Ins. Mens., vii, 17, 1919.

*Aedes lazarensis* Dyar, Ins. Ins. Mens., viii, 5, 1920.

*Aedes (Heteronycha) lazarensis* Dyar, Ins. Ins. Mens., viii, 105, 1920.

*Aedes lazarensis* Dyar, Ins. Ins. Mens., ix, Plate 1, fig. 1, 1921.

*Aedes (Heteronycha) lazarensis* Dyar, Trans. Royal Can. Inst., xiii, part 1, 98, 1921.

This species is characteristic of the Canadian forested region; being on the whole the most abundant form. It is probably not specifically separable from *Aedes communis* DeGeer of northern Europe. In the west a number of local forms may be recognized as subspecies.

#### *Aedes lazarensis borealis* Ludlow.

*Culex borealis* Ludlow, Can. Ent., xliiii, 178, 1911.

*Aedes borealis* Howard, Dyar & Knab, Mosq. No. & Cent. Am. & W. I., iv, 1041, 1917.

*Aedes lazarensis borealis* Dyar, Ins. Ins. Mens., viii, 6, 1920.

*Aedes lazarensis borealis* Dyar, Ins. Ins. Mens., viii, 165, 1920.

*Aedes lazarensis borealis* Dyar, Trans. Royal Can. Inst., xiii, part 1, 98, 1921.

Characterized by the extreme variability and the occurrence of specimens with the mesonotum whitish instead of yellow. The normal form also occurs, but rather as an aberration. I observed this subspecies in the Yukon watershed from Carcross to Dawson and at Skagway, Alaska. Dr. Ludlow's types came from Eagle, Alaska, some miles down the Yukon below Dawson.

#### *Aedes lazarensis altiusculus* Dyar.

*Aedes altiusculus* Dyar, Ins. Ins. Mens., v, 100, 1917.

*Aedes (Ochlerotatus) altiusculus* Dyar, Ins. Ins. Mens., vi, 78, 1918.

*Aedes (Heteronycha) altiusculus* Dyar, Ins. Ins. Mens., viii, 105, 1920.

Found on the meadows on the lower slopes of Mount Rainier, Washington. It is a diminutive form, flying with the large *Aedes aboriginis* Dyar, a species belonging to the moist coastal fauna, a very peculiar association.

#### *Aedes lazarensis masamae* Dyar.

*Aedes (Heteronycha) masamae* Dyar, Ins. Ins. Mens., viii, 166, 1920.

This form inhabits the slopes of the mountains about Crater Lake, Oregon. These slopes are long and gentle, and in spring the retreating snow forms a definite even line. Visiting this region in May, the snow line was about twenty miles above

Prospect. At Prospect *masamae* was scarce, though a few adults were taken. On reaching snow-line, however, they were abundant, and continued so over the snow up to the summit. People living there called them "snow mosquitoes" and were of the opinion that they bred from the snow banks. Larvæ were found, however, in small pools along the course of a rivulet issuing from the melting snow, a short distance below the snow-fields. The adults evidently follow the snow upward as it melts, at least the great majority of them, remaining at high altitudes after the snow has gone till late in the season. The dampness of the snow-banks may prove attractive to them. I have not observed such a phenomenon elsewhere.

The form *masamae* is distinguished by the dark brown shade overspreading the mesonotum, although normally colored gray individuals occur.

#### ***Aedes lazarensis tahoënsis* Dyar.**

*Aedes tahoënsis* Dyar, Ins. Ins. Mens., iv, 82, 1916.

*Aedes tahoënsis* Dyar, Ins. Ins. Mens., v, 11, 1917.

*Aedes tahoënsis* Howard, Dyar & Knab, Mosq. No. & Cent. Am. & W. I., iv, 1041, 1917.

*Aedes (Ochlerotatus) tahoënsis* Dyar, Ins. Ins. Mens., vi, 78, 1918.

*Aedes (Heteronychia) tahoënsis* Dyar, Ins. Ins. Mens., viii, 165, 1920.

This form inhabits the northern Sierras of California. The adults have the mesonotum gray with slight brown suffusion without great variation. The larvæ hatch in large numbers in special large open pools, very early in the season. Tramping over the snow-banks at Summit, California, in April, these pools would be found full of snow and frozen over except at the warmest corner. Here the larvae of *tahoënsis* occurred, well grown, mostly in the last stage, before any of the other species of the region had begun to hatch from the eggs. After the snow is gone, these larvae linger in these large pond-like pools, gradually pupating, drifting about in masses from one side of the pool to another by the wind. These pools occur along the valleys of little streams in their upper reaches, and dry out during the summer.

## SERIES 2

## SPECIES 4

**Aedes (Ochlerotatus) impiger** Walker.

*Culex impiger* Walker, List Dipt. Brit. Mus., i, 6, 1848.

*Aedes decticus* Howard, Dyar & Knab, Mosq. No. & Cent. Am. & W. I., iv, 737, 1917.

*Aedes lazarensis* Dyar (not Felt & Young), Ins. Ins. Mens., vi, 78, 1918.

*Aedes decticus* Dyar, Ins. Ins. Mens., vii, 21, 1919.

*Aedes impiger* Dyar, Ins. Ins. Mens., viii, 8, 1920.

*Aedes (Heteronycha) impiger* Dyar, Ins. Ins. Mens., viii, 105, 1920.

*Aedes (Heteronycha) impiger* Dyar, Trans. Royal Can. Inst., xiii, part 1, 100, 1921.

This species extends throughout Canada to Alaska and in northern New England, New York, Minnesota and Montana, but is not known in the mountains of the Pacific Coast. The larvae occur in small forest pools, resembling those of *lazarensis* closely. The species is never abundant.

## SPECIES 5

**Aedes (Ochlerotatus) cataphylla** Dyar.

*Aedes cataphylla* Dyar, Ins. Ins. Mens., iv, 86, 1916.

*Aedes cataphylla* Howard, Dyar & Knab, Mosq. No. & Cent. Am. & W. I., iv, 1041, 1917.

*Aedes prodotes* Dyar, Ins. Ins. Mens., v, 118, 1917.

*Aedes (Ochlerotatus) prodotes* Dyar, Ins. Ins. Mens., vi, 78, 1918.

*Aedes prodotes* Dyar, Ins. Ins. Mens., vii, 22, 1919.

*Aedes (Heteronycha) prodotes* Dyar, Ins. Ins. Mens., viii, 106, 1920.

*Aedes (Heteronycha) cataphylla* Dyar, Ins. Ins. Mens., viii, 106, 1920.

*Aedes (Heteronycha) cataphylla* Dyar, Ins. Ins. Mens., viii, 167, 1920.

*Aedes (Heteronycha) prodotes* Dyar, Trans. Royal Can. Inst., xiii, part 1, 101, 1921.

*Ochlerotatus prodotes* Wesenberg-Lund, Mém. l'Acad. Royale d. Sci. et d. Lett. de Danemark, (8), vii, 81, 1921.

*Ochlerotatus prodotes* Séguy, Bull. du Mus. d'Hist. nat., Paris, xxvi, 411, 1921.

This species was found breeding abundantly in small grassy pools in narrow meadows along the Little Truckee River, California. Also in a large pool of snow-water near Tahoe Tavern on Lake Tahoe, California. The species favors open forest, and occurs from the Rocky Mountains westward to Yukon Territory, and in the high Sierras of California. It has not been found in the Cascades. It is also recorded as occurring in Scandinavia and other parts of northern Europe, but I have not compared specimens. The larva is of the *lazarensis* type, but has two or more detached teeth on the air-tube between the hair-tuft and the apex, which is a unique character. The species often occurs in large numbers, when present at all.

## SPECIES 6

***Aedes* (*Ochlerotatus*) *niphadopsis* Dyar & Knab.**

*Aedes niphadopsis* Dyar & Knab, *Ins. Ins. Mens.*, v, 166, 1918.

*Aedes niphadopsis* Dyar, *Ins. Ins. Mens.*, viii, 138, 1920.

*Aedes* (*Heteronychia*) *niphadopsis* Dyar, *Ins. Ins. Mens.*, viii, 105, 1920.

This species is known only from the eastern shore of Great Salt Lake, Utah. The larva resembles that of *impiger* rather than *cataphylla*, though clearly distinct. The adult has the white-marked and barred vestiture of other species inhabiting open desert regions.

## NEW AMERICAN MOTHS AND NOTES

(*Lepidoptera*)

By HARRISON G. DYAR

Family LITHOSIIDÆ

***Afrida exegens*, new species.**

Fore wing gray; a broad white band beyond base, the edges irregular; an outer band, consisting of a long costal patch joined to a rounded spot, reduced to a thread, which joins a tornal spot; some black marking at base of costa and in cell, bordering the white basally and distally. Hind wing white,